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Abstract

NUCLEAR FUEL SUPPLYING. PROGRAM AND RESULTS IN BRAZIL

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Since its foundation, in 1956, and based upon its means and needs, the Brazilian National Nuclear Energy Commission has been fulfilling, without interruption, a program of equipping its field parties and laboratories and carrying out general and detailed mineral prospection.

Before the end of 1966 the National Nuclear Energy Commission expects to finish an appraisal of all readily available sources of nuclear ore in the national territory. In a parallel development a pilot plant was installed and has been working in problems related to the processing of Brazilian ores.

The Authors enumerate the following items upon which the mentioned program and accomplishments are based:

a. The preoccupation of keeping cost and prices within the limits set by the international representative standards;

b. Giving up, for the moment, any prospection work in territories too far away from the main centers of production and consumption;

c. The directive followed to prospect the selected areas rests on the following alternative options:

I. The study of facies of old and recent continental - detritic rocks;

II. The prospection of rocks of alkaline chimneys.

d. As a consequence, of the precedig options, the following rocks and formations are excluded for the moment from the prospecting operations:

I. The metamorphic formations which constitute the essential part of the Brazilian Shield;

II. The granitic formations, since the hydrothermal manifestations are scarce in Brazilian granites;

III. The pegmatitic formations from which economical extraction of nuclear minerals, even as by - products seems to be hopeless or at least, very unlikely:

IV. The occurence of Thorium bearing minerals as the detailed prospection of the already known sites could be carried out quickly if the needs required it.

The Authors show, in the following paragraphs, examples of strict application of a prospection sequence type which runs from the critical analysis of literature to the final detailed prospection, through the use of all techniques such as geochemistry, geophysics and airborne scintillometry. A general Table of methods reveals certain unusual variants of application. Next, information concerning each sector of study is condensed in a light Table where problems of peculiar nature, adopted solutions and attained results are recorded.

The Authors show, in conclusion, that everything was done to perform the work in the shortest time and at the lowest price. The ultimate goals of the National Nuclear Energy Commission of Brazil will be fully accomplished if an approximate inventory of its resources of nuclear ores the far reaching future and two or three Uranium deposits of reasonable size for meeting the needs of the Country in the next decade, is secured within - the estimated time.